

Appl. N . 09/929,270
Amdt. dated December 30, 2003
Reply to Office Action of June 30, 2003

PATENT

REMARKS/ARGUMENTS

Claims 1-12, 15-19, 30-43, 45-47, 58-61, and 64-78 are canceled without prejudice.

Claims 13, 28 and 29 are amended without adding new matter.

Claims 13, 14, 20-29, 44, 48-57, 62, and 63 are pending.

Claims 13, 14, 20-29, 44, 48-57, 62, and 63 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nelson (6,074,827).

Applicants request reconsideration of this rejection in view of the following arguments.

Claims 13-14 and 20-27

Applicants submit that independent claim 13, as amended, is patentable over Nelson because, for instance, Nelson does not show a device having the claimed combination of elements:

- i) a reaction chamber for subjecting the nucleic acid to an amplification reaction;
- ii) a separation channel for separating products of the amplification reaction;
- iii) a transition region connecting the reaction chamber to the separation channel;
- iv) at least a first valve in the transition region for controlling fluid flow between the reaction chamber and the separation channel;
- v) a side channel connected to the transition region for adding or removing fluid from the transition region; and
- vi) at least a second valve for controlling fluid flow through the side channel;

This combination of elements as recited in amended claim 13 is not obvious from the teachings of Nelson. For at least the foregoing reasons, independent claim 13 and claims 14 and 20-27 depending therefrom are patentable.

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Claims 28-29

Applicants submit that independent claim 28 is patentable over Nelson because, for instance, Nelson does not show a device having the claimed combination of elements:

- a) a reaction chamber for chemically reacting the sample;
- b) a separation region comprising a plurality of ligand-binding sites;
- c) a transition region connecting the reaction chamber to the separation region; and
- d) at least one valve in the transition region for controlling fluid flow between the reaction chamber and the separation region.

In Fig. 16 and Fig. 17, Nelson does show devices having a plurality of affinity zones and states that the capture principle may include receptor-ligand binding. However neither device includes a reaction chamber for chemically reacting the sample and at least one valve in a transition region for controlling fluid flow between the reaction chamber and the affinity zones. Thus Nelson fails to teach or suggest the combination of elements recited in claim 28. For at least the foregoing reasons, independent claim 28 and claim 29 depending therefrom are patentable.

Claims 44 and 48-53

Applicants submit that independent claim 44 is patentable over Nelson because, for instance, Nelson does not show or describe a device having a three-way valve at a junction of a side channel and a transition region connecting a reaction chamber to a separation channel.

In the device of Nelson where valves are described (Figs. 1 and 2) the device does not even have a reaction chamber, and the valves are not three-way valves. In fact, nowhere does Nelson teach or suggest a three-way valve. Thus Nelson fails to teach or suggest the structure recited in claim 44. For at least the foregoing reasons, independent claim 44 and claims 48-53 depending therefrom are patentable.

Claims 54-57 and 62-63

Applicants submit that independent claim 54 is patentable over Nelson because, for instance, Nelson does not show or describe a device having a first electrode coupled to a body adjacent a reaction chamber; a second electrode coupled to the body adjacent a transition

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region; and a third electrode coupled to the body adjacent a separation region, the electrodes being positioned such that when a first voltage is applied between the first and second electrodes, the components in the sample are transported from the reaction chamber to the transition region, and such that when a second voltage is applied between the second and third electrodes, the sample components are transported into the separation region.

In the office action the Examiner did not state any reasons specific to claim 54 as to why claim 54 would be obvious in view of Nelson. Applicants submit that Nelson fails to teach or suggest the structure recited in claim 54. For at least the foregoing reasons, independent claim 54 and claims 55-57 and 62-63 depending therefrom are patentable.

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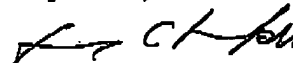
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CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



Chun-Pok Leung
Reg. No. 41,405

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 650-326-2400
Fax: 650-326-2422
RL:asb
60109505 v1